



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/595,107

02/16/2006

Hiroshi Hamamatsu

Q92742

2701

23373 7590 02/25/2008
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

02/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/595,107	Applicant(s) HAMAMATSU ET AL.	
	Examiner C. Melissa Koslow	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/06,9/06</u> . | 6) <input type="checkbox"/> Other: ____. |

The foreign references cited in the information disclosure statement filed 16 February 2006 fail to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

US 20042704 cited in the information disclosure statement filed 16 February 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because a US patent having this number does not exist. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

The Japanese references cited in the information disclosure statement of 15 September 2006 have been considered with respect to the provided English abstracts.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 7 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex*

parte Dunki, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 provides for the use of the phosphors, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 6 and 7 teaches devices comprising and uses of any of the phosphors according to claim 1 to 5. This wording is improper since claims should be referred in the alternative only. It is suggested to rewrite the claims deleted in the phrase “any of the phosphors according to claim 1 to 5” with “the phosphors of any one of claims 1 to 5” to overcome this rejection.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 10/556,680. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims teach a calcium strontium magnesium disilicate phosphor activated with only divalent europium and VUV excited light emitting devices containing the phosphor. The taught phosphor read upon that claimed since the formula for the phosphor only allows for divalent europium, which means $R=100\%$ and if any trivalent europium is present it is present in an impurity amount, which means R would inherently fall within the claimed ranges, absent any showing to the contrary. There is no teaching in the copending application that the phosphor must be water washed, which this application implies produces R values outside the claimed range.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 7,011,770. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed method produces the phosphor claimed in this application since this application teaches acid washing produces disilicate or digermanate phosphors having the claimed R values and since claim 6 in the patent teaches the produced phosphor is for VUV excited light emitting devices, one of ordinary skill in the art would have found it obvious to use the phosphors resulting from

Art Unit: 1793

the patented process in VUV excited light emitting devices, which suggested the use and device claimed in this application.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 4,122,349; 4,128,498 or 4,748,391.

All three of these patents teach divalent activated Si containing phosphors. The taught phosphors all read upon that claimed since the formulas for the phosphors only allows for divalent europium, which means R=100% and if any trivalent europium is present it is present in an impurity amount, which means R would inherently fall within the claimed ranges, absent any showing to the contrary. The references teach the claimed phosphor.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 03/036675.

Claims 1-7 are rejected under 35 U.S.C. 102(a) as being anticipated by U.S. patent application publication 2004/0080271.

U.S. patent application publication 2004/0080271 is the national stage application for WO 03/036675 and thus is the translation for WO 03/036675.

Art Unit: 1793

These references teach VUV excited light emitting devices containing a phosphor having the formula $M_{1-x}MgSi_2O_6:Eu_x$ or $M_{3(1-x)}MgSi_2O_8:Eu_x$, where M is at least one of Ca, Sr and Ba (para 0035). These formulas fall within that of claim 5. The taught phosphors all read upon that claimed since the formulas for the phosphors only allows for divalent europium, which means $R=100\%$ and if any trivalent europium is present it is present in an impurity amount, which means R would inherently fall within the claimed ranges, absent any showing to the contrary. There is no disclosure of water washing in the references which this application implies produces R values outside the claimed range. The references teach the claimed phosphor, use and device.

Claims 1-7 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent application publication 2002/0038861.

This reference teaches VUV excited light emitting devices containing a phosphor having the formula $M_{1-x}MgSi_2O_6:Eu_x$, where M is Sr, Ba, combinations of Sr and Ca, combinations of Ba and Ca, combinations of Ba and Sr and combinations of Ba, Ca and Sr. This formula falls within that of claim 5. The taught phosphors all read upon that claimed since the formulas for the phosphors only allows for divalent europium, which means $R=100\%$ and if any trivalent europium is present it is present in an impurity amount, which means R would inherently fall within the claimed ranges, absent any showing to the contrary. There is no disclosure of water washing in the references which this application implies produces R values outside the claimed range. The reference teaches the claimed phosphor, use and device.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 7,011,770

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This reference teaches acid washing europium activated silicon and germanium containing phosphors, such as those having the formula of claim 5 and using these phosphors in VUV excited light emitting devices. Thus the reference implicitly teaches VUV excited light emitting devices containing the taught phosphors. The taught process is that taught by applicants in this application and thus the phosphors resulting from the process of U.S. patent 7,001,770 is the same as that claimed in this application, absent any showing to the contrary. The reference teaches the claimed phosphors, devices and use.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 4,128,498.

As discussed above, this reference teaches the claimed phosphor. The reference teaches these phosphors are excited by VUV rays. Therefore one of ordinary skill in the art would have

Art Unit: 1793

found it obvious to use the taught phosphors in VUV excited light emitting devices. The reference suggests the claimed use and device.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/097767.

U.S. patent 7,161,298 is the national stage application for WO 03/097767 and thus is the translation for WO 03/097767.

This reference teaches VUV excited light emitting devices containing a phosphor having the formula $M_3MgSi_2O_8:Eu$, where M is at least one of Ca, Ba and Sr and the concentration of divalent europium in the phosphor is 45-95% and the concentration of trivalent europium in the phosphor is 5-55%. The formula of the host for the phosphor falls within that of claim 5. One of ordinary skill in the art would expect that this ratio of divalent to trivalent europium to give an R range that at least overlaps the claimed ranges, absent any showing to the contrary.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003-238954

The translation for this reference teaches VUV excited light emitting devices containing a phosphor having the formula $MMgSi_2O_6:Eu$, where M is at least one of Ca, Ba and Sr and the concentration of divalent europium in the phosphor is 45-95% and the concentration of trivalent europium in the phosphor is 5-55%. The formula of the host for the phosphor falls within that of claim 5. One of ordinary skill in the art would expect that this ratio of divalent to trivalent europium to give an R range that at least overlaps the claimed ranges, absent any showing to the contrary.

Art Unit: 1793

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/
February 27, 2008

/C. Melissa Koslow/
Primary Examiner
Art Unit 1793